CLAIMS

1. Device for measuring the speed and direction of rotation of an object (3), near to which it is placed, characterised in that it comprises:

- a magnetic detection device (2) that delivers, in response to a rotation of the object (3) generating a magnetic field variation, signals representative of its speed and its direction of rotation,
- a conductor (4) intended to be connected to a power source to supply current to the magnetic detection device (2) at least,
- current receptor means (6) placed between the magnetic detection device (2) and the conductor (4) that create, from signals coming from the magnetic detection device (2), a modulation of the current (Iout) flowing in the conductor (4), said modulated current (Iout) reflecting both the speed and the direction of rotation of the object (3).

2. Device for measuring the speed and direction of rotation of an object (3) according to claim 1, characterised in that the current receptor means (6) comprise at least one series assembly (61, 62) formed of a resistor (R1, R2) and a commutation element (Q5).

3. Device for measuring the speed and direction of rotation of an object (3) according to either of claims 1 or 2, characterised in that the frequency of the

modulated current (Iout) or the number of transitions that is has reflects the speed of the object (3).

4. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 3, characterised in that the form of the modulated current (Iout) reflects the direction of rotation of the object (3).

5. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 4, characterised in that the magnetic detection device (2) is a linear sensor delivering two pairs of signals out of phase with each other, said signals being relative to the angular position of the object.

6. Device for measuring the speed and direction of rotation of an object (3) according to claim 5, characterised in that it comprises two comparators (C1, C2), the input of each receiving the signals of a pair, the output of each comparator (C1, C2) being connected to the conductor (4) via a resistor (R1, R2) of a series assembly, the two resistors (R1, R2) having different values.

7. Device for measuring the speed and direction of rotation of an object (3) according to claim 6, characterised in that each comparator (C1, C2) includes a

commutation element (Q5) for the current receptor means (6).

8. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 4 to 7, characterised in that the modulated current (Iout) has a first asymmetric form when the object turns in one direction and the same form but seen in a mirror when the object (3) turns in the other direction.

9. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 4, characterised in that the magnetic detection device (2) is a digital sensor delivering a signal representative of the speed and a signal representative of the direction of rotation of the object.

10. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 5, 9, characterised in that the modulated current (Iout) has a cyclic ratio greater than a predetermined threshold when the object (3) turns in one direction and a cyclic ratio less than the predetermined threshold when the object (3) turns in the other direction.

11. Device for measuring the speed and direction of rotation of an object (3) according to claim 10 linked to any of claims 1 to 5, characterised in that it comprises two comparators (C1, C2), the input of each receiving the

signals of a pair, means of encoding (50) the direction of rotation of the object, the input of which is connected to the output of the comparators (C1, C2), means of mixing (51), the input of which is connected to the output of the comparators (C1, C2) and to the output of the means of encoding (50), the output of the means of mixing (51) delivering a unique signal (S) reflecting the speed and direction of rotation of the object (3), said unique signal controlling the current receptor means (6).

12. Device for measuring the speed and direction of rotation of an object (3) according to claim 11, characterised in that the means of encoding (50) the direction of rotation comprises a switchover D.

13. Device for measuring the speed and direction of rotation of an object (3) according to claim 10 linked to claim 9, characterised in that it comprises, means of mixing (83), the input of which is connected to the magnetic detection device (80) and the output of which delivers a unique signal (S) reflecting the speed and direction of rotation of the object (3), said unique signal controlling the current receptor means (6).

14. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 11 to 13, characterised in that the means of mixing (51, 83) are formed by a circuit based on logic gates (60 to 65, 800 to 805).

15. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 14, characterised in that the magnetic detection device (3, 80), the conductor (4) and the current receptor means (6) at least are encapsulated in an enclosure (1) made out of non-magnetic material, the conductor (4) being accessible from the exterior of said enclosure (1).

16. Device for measuring the speed and direction of rotation of an object (3) according to claim 15, characterised in that the enclosure (1) is formed out of metal such as titanium or stainless steel.

17. Device for measuring the speed and direction of rotation of an object (3) according to any of claims 1 to 16, characterised in that the magnetic detection device (3, 80) is connected to another conductor (5) for its power supply, said other conductor (5) coming into electrical contact with the enclosure (1).

18. Magnetic system for acquiring data in a flow, characterised in that it comprises a measuring device according to any of claims 1 to 17, and an object (3) in the form of a non-magnetic propeller (30) integral with at least one magnet (31).

19. Magnetic system for acquiring data according to claim 19, characterised in that the propeller (30) and

the measuring device are in the same line as each other, along the axis of the propeller.